



Acquisition Directorate

Nationwide Automatic Identification System Project

Nationwide Automatic Identification System (NAIS) Overview

CG-939 | Mr. E. G. Lockhart

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Agenda

Concept of Operations

Acquisition Strategy

Architecture

Timeline

Project Status

- Increment 1
- Increment 2
- Increment 3

Summary

NAIS Points of Contact

NAIS Project Overview

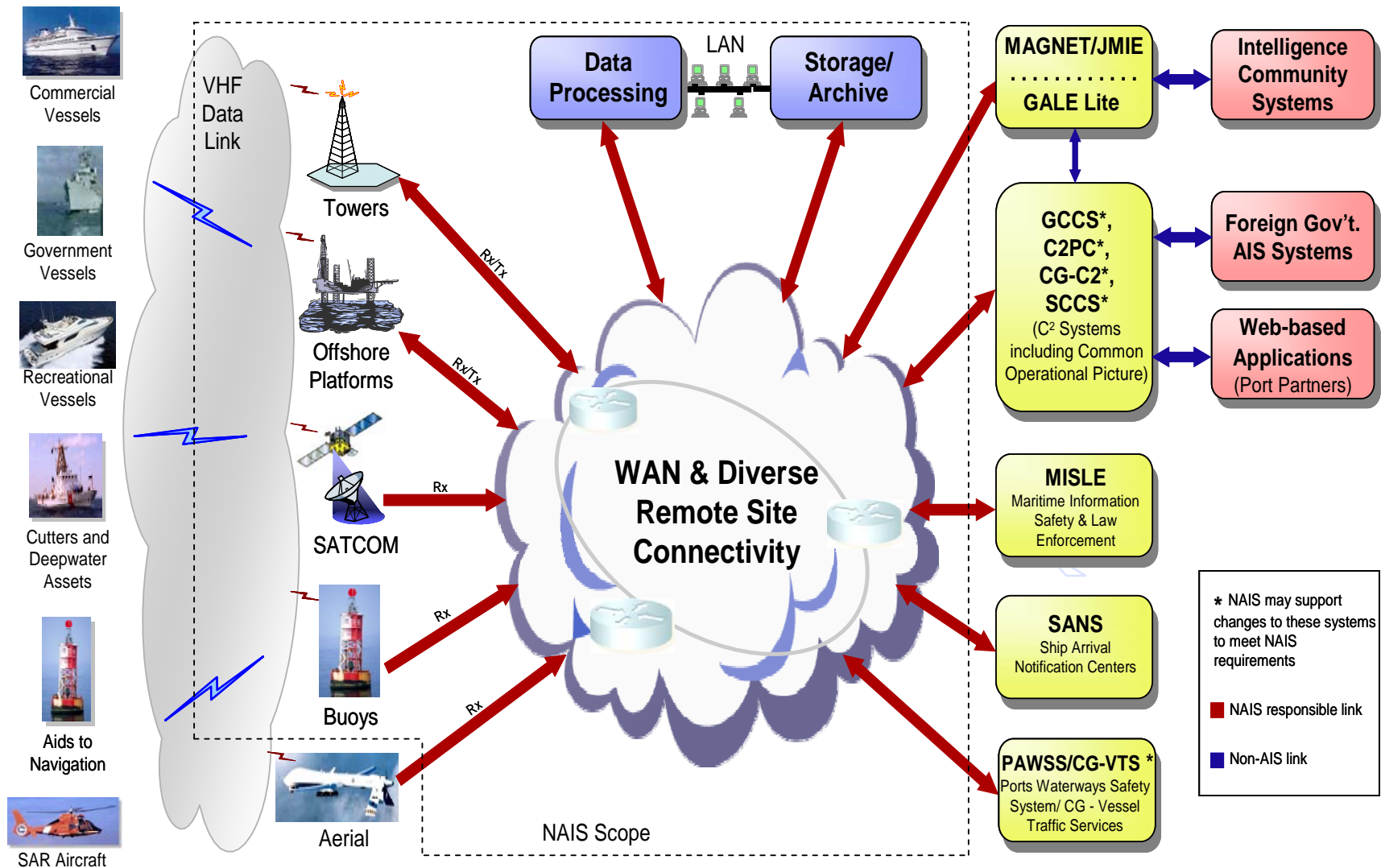
Concept of Operations

- Automatic reception of AIS messages from AIS-equipped vessels out to 2000 nm
- Transmission of AIS messages out to 24 nm from shore
- Correlation with other database systems for intelligence and operational decision makers
- Shared with others & displayed on a Common Operational Picture

Incremental Acquisition Strategy

- Increment 1 – “Receive only” in 55 critical ports and 9 coastal areas
- Increment 2 – Nationwide 50 nm receive and 24 nm transmit
- Increment 3 – Extend receive out to 2000 nm

NAIS Architecture



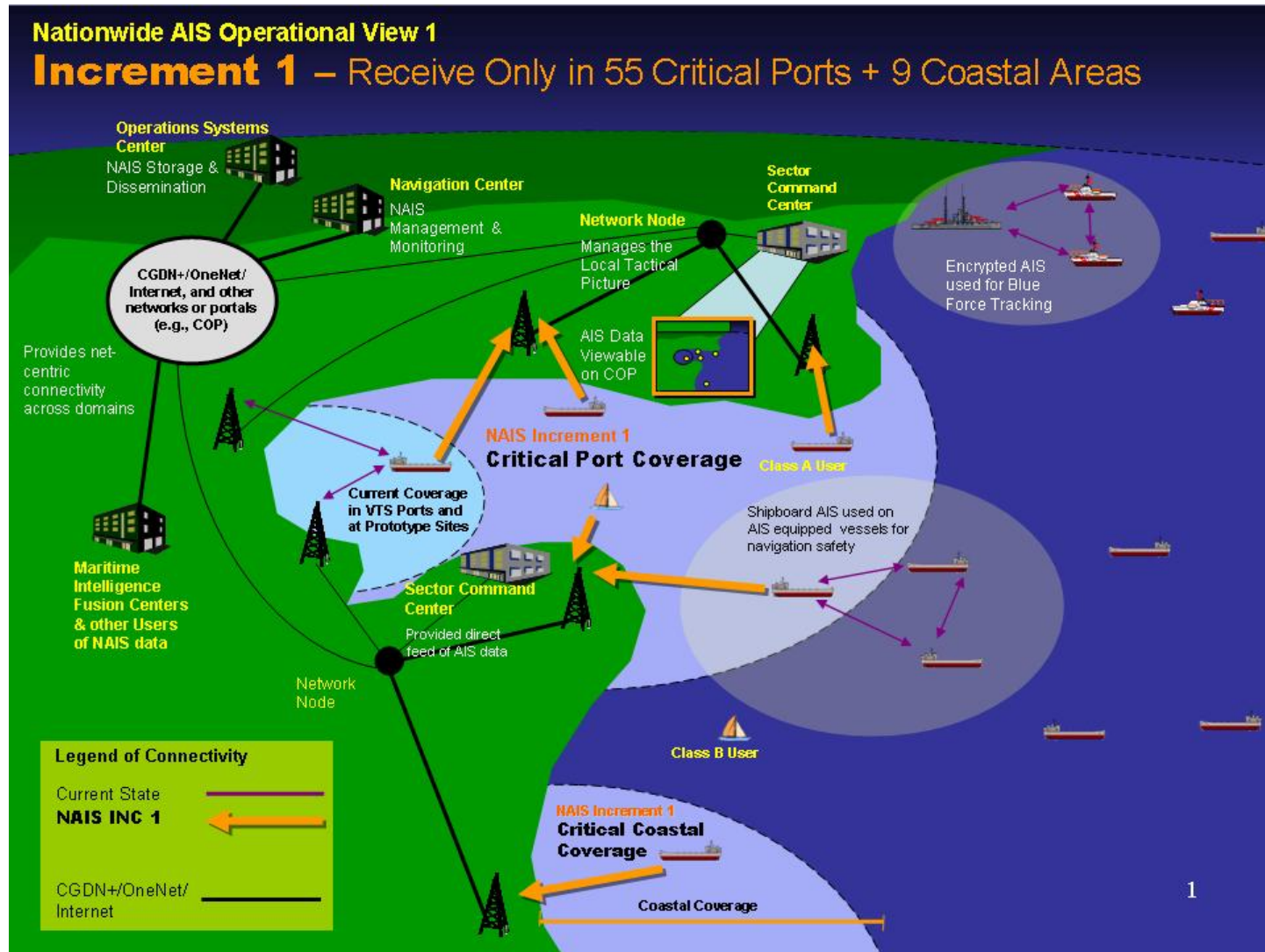
NAIS Project Timeline

Incremental Acquisition

- Increment 1 – In Sustainment
 - Initial Operational Capability (IOC) – 31 Dec 2006
 - Full Operational Capability (FOC) – 30 Sep 2007
- Increment 2 – In Source Selection
 - Contract Award – Q4 FY 08
 - IOC – Q4 FY10
 - FOC – Q4 FY16
- Increment 3 – Currently In Concept Development
 - Assess prototype data feed performance and address technical issues
 - Refine acquisition strategy and performance requirements
 - Expecting contract for AIS data services over required areas

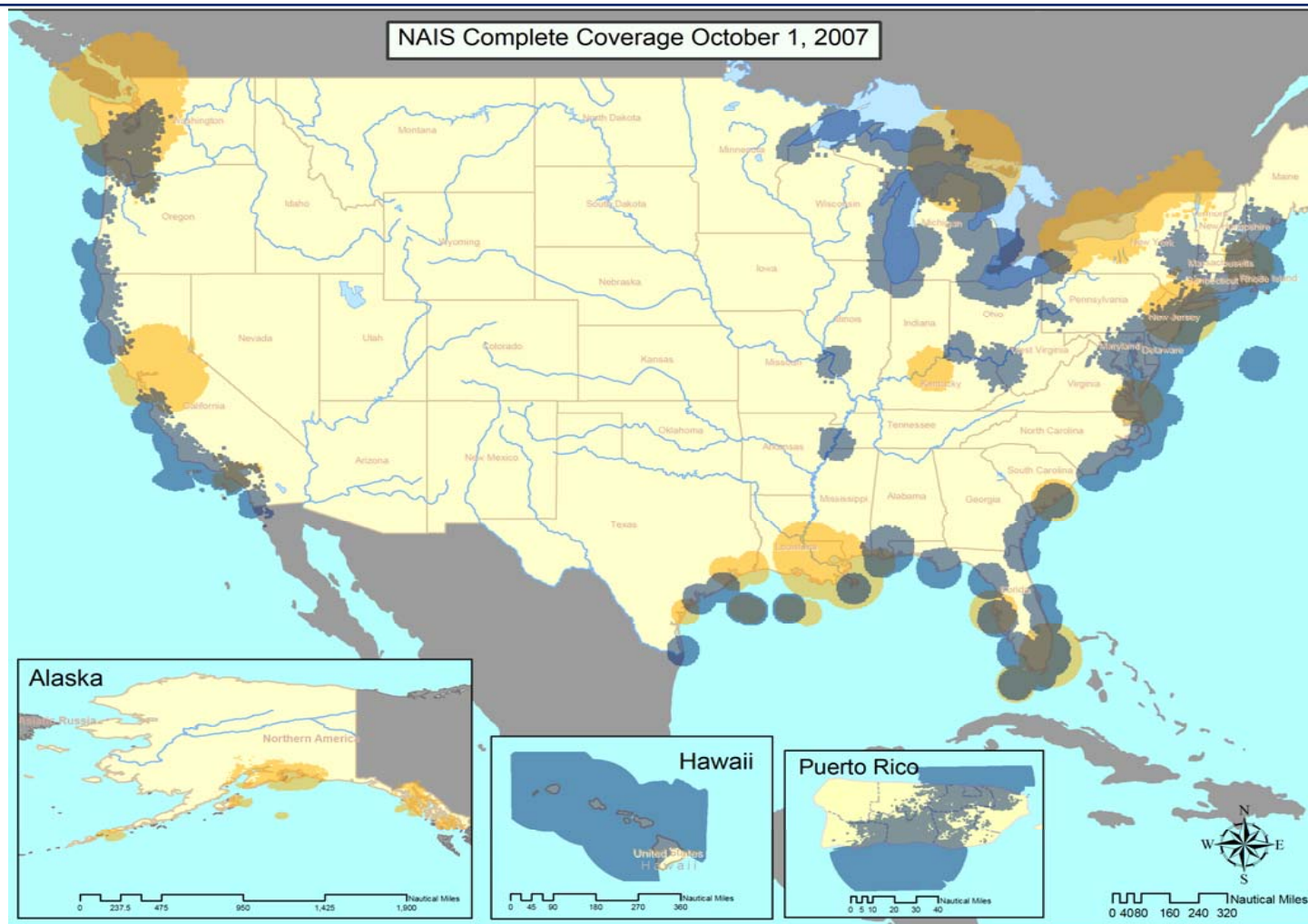


Increment 1 Conceptual View

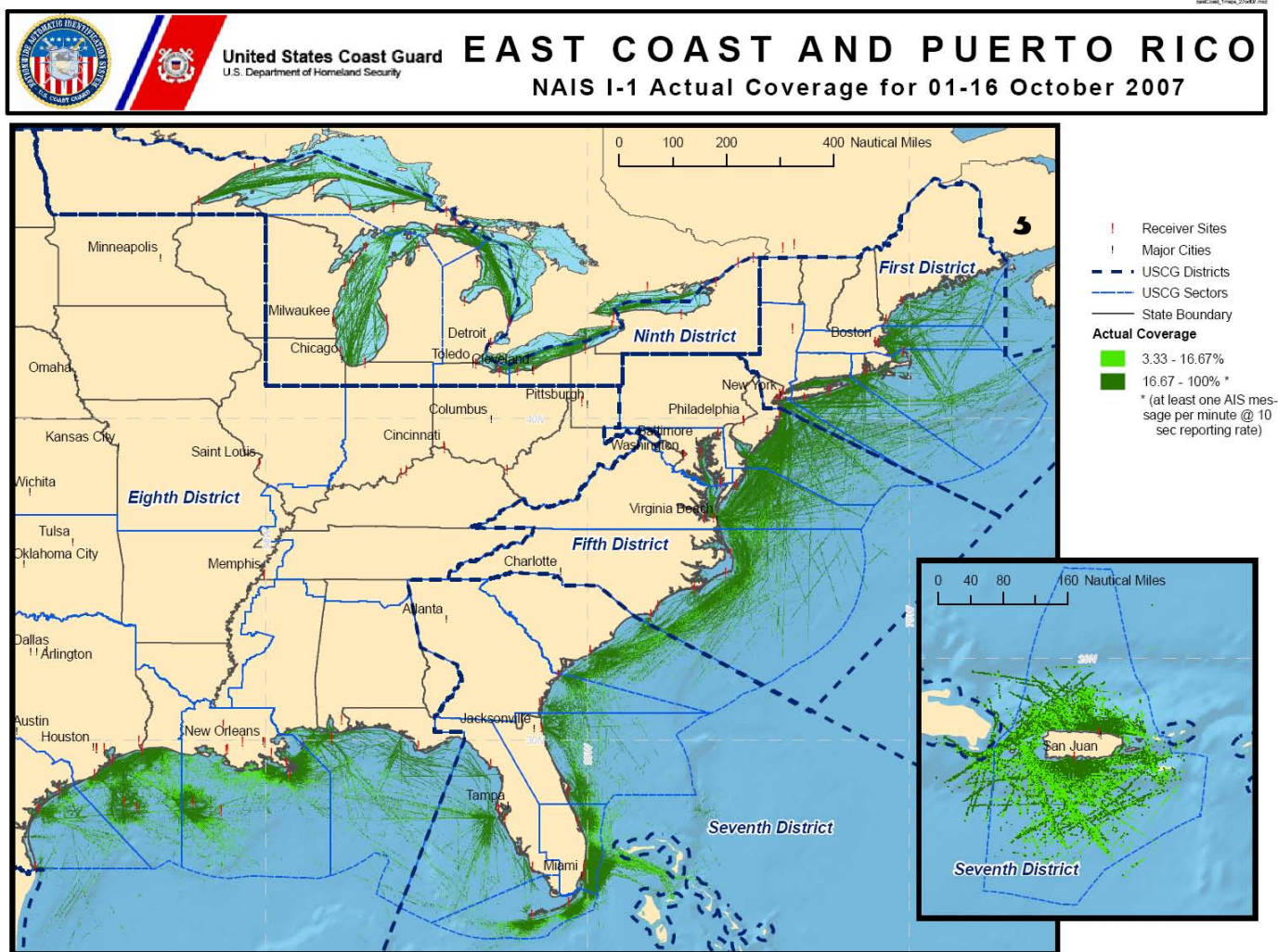


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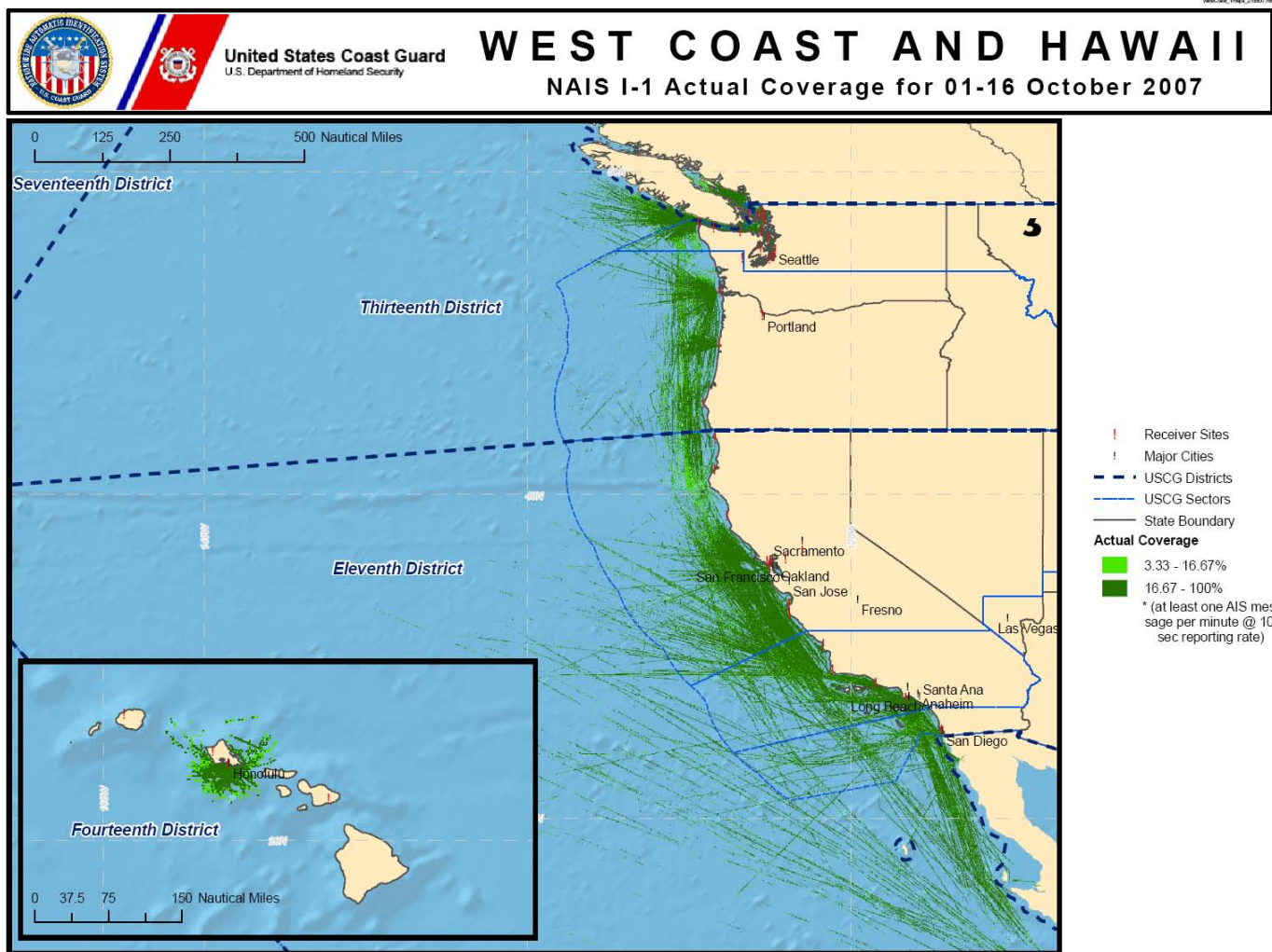
Increment 1 Predicted Coverage



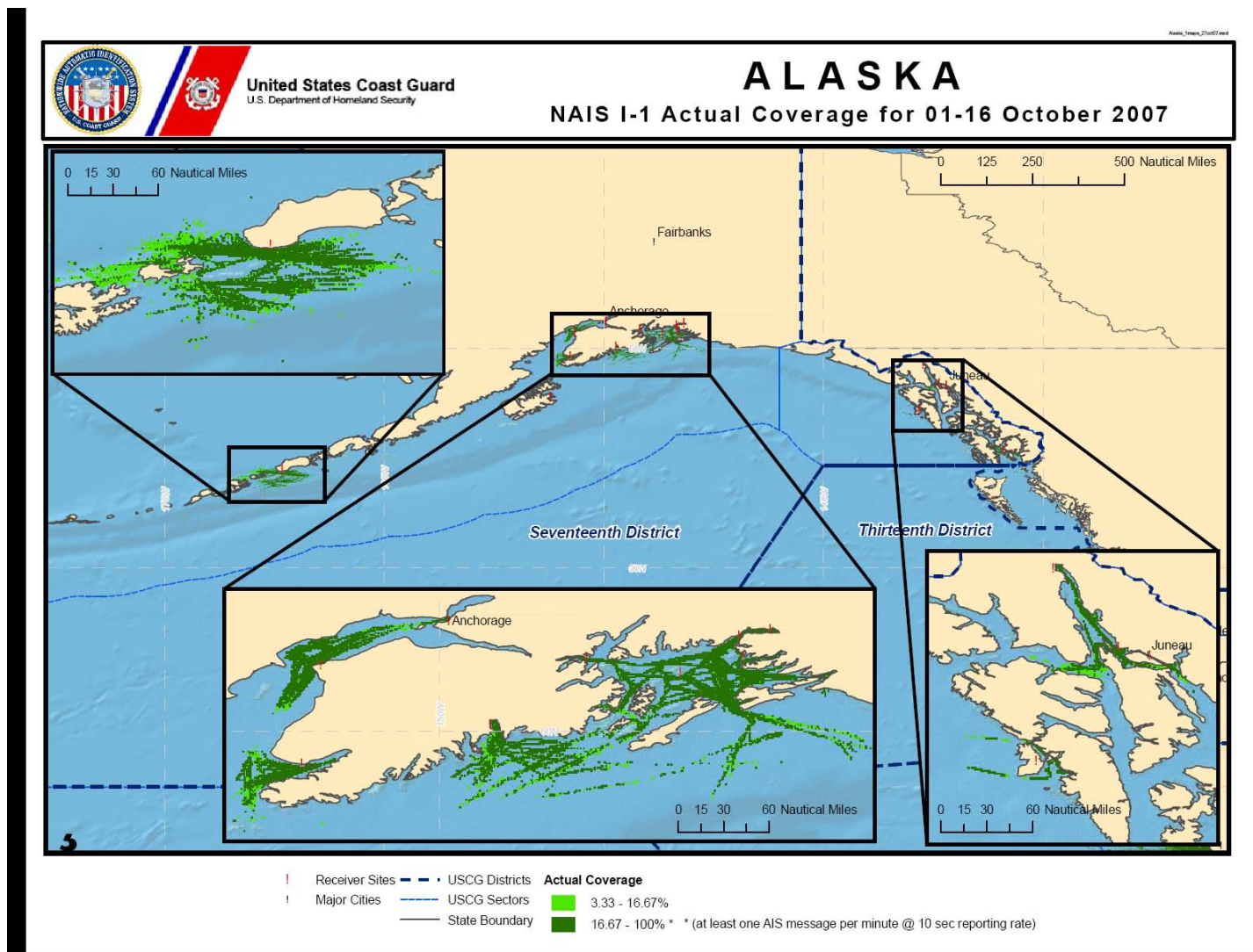
Increment 1 Received Tracks - Atlantic



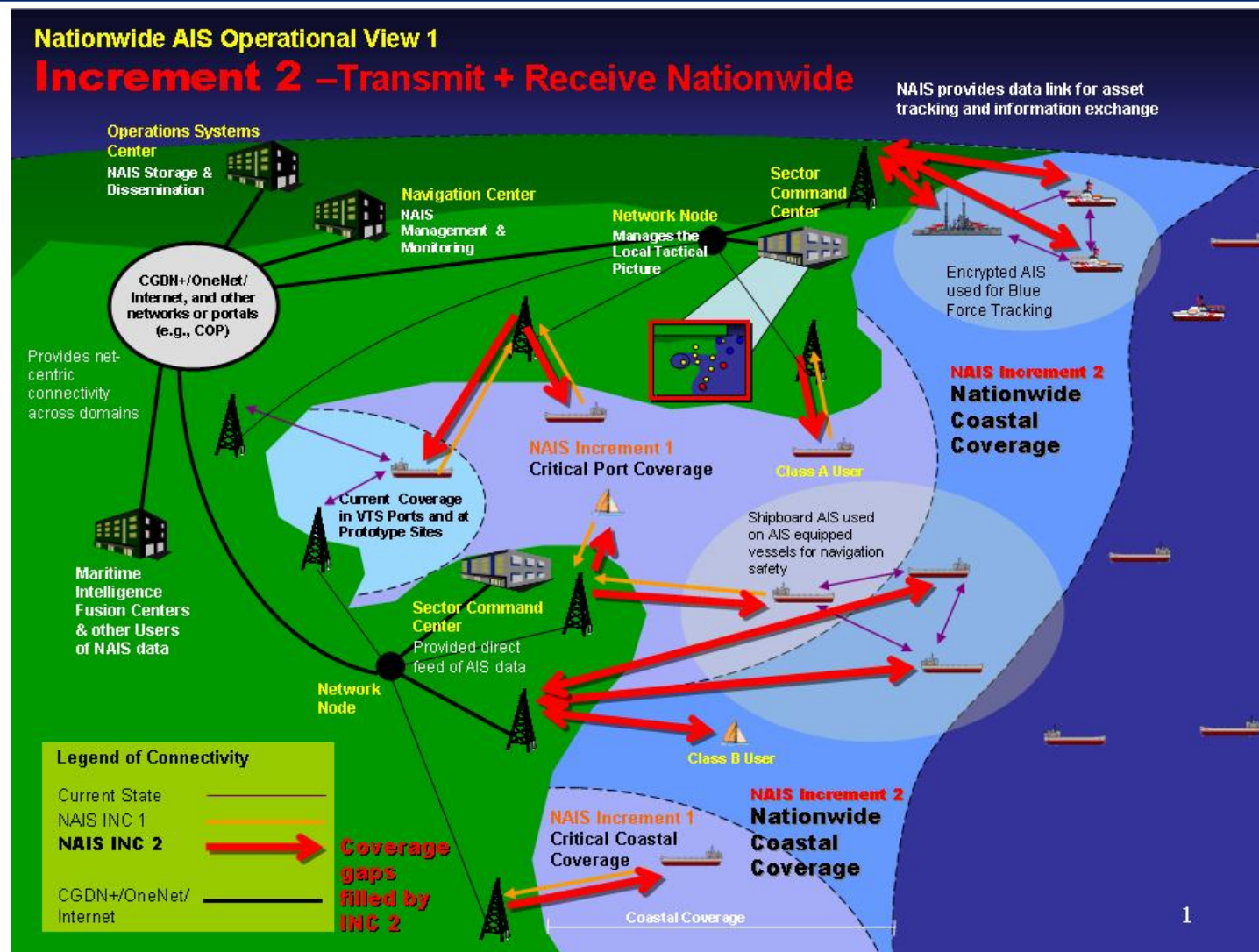
Increment 1 Received Tracks - Pacific



Increment 1 Received Tracks - Alaska



Increment 2 Conceptual View

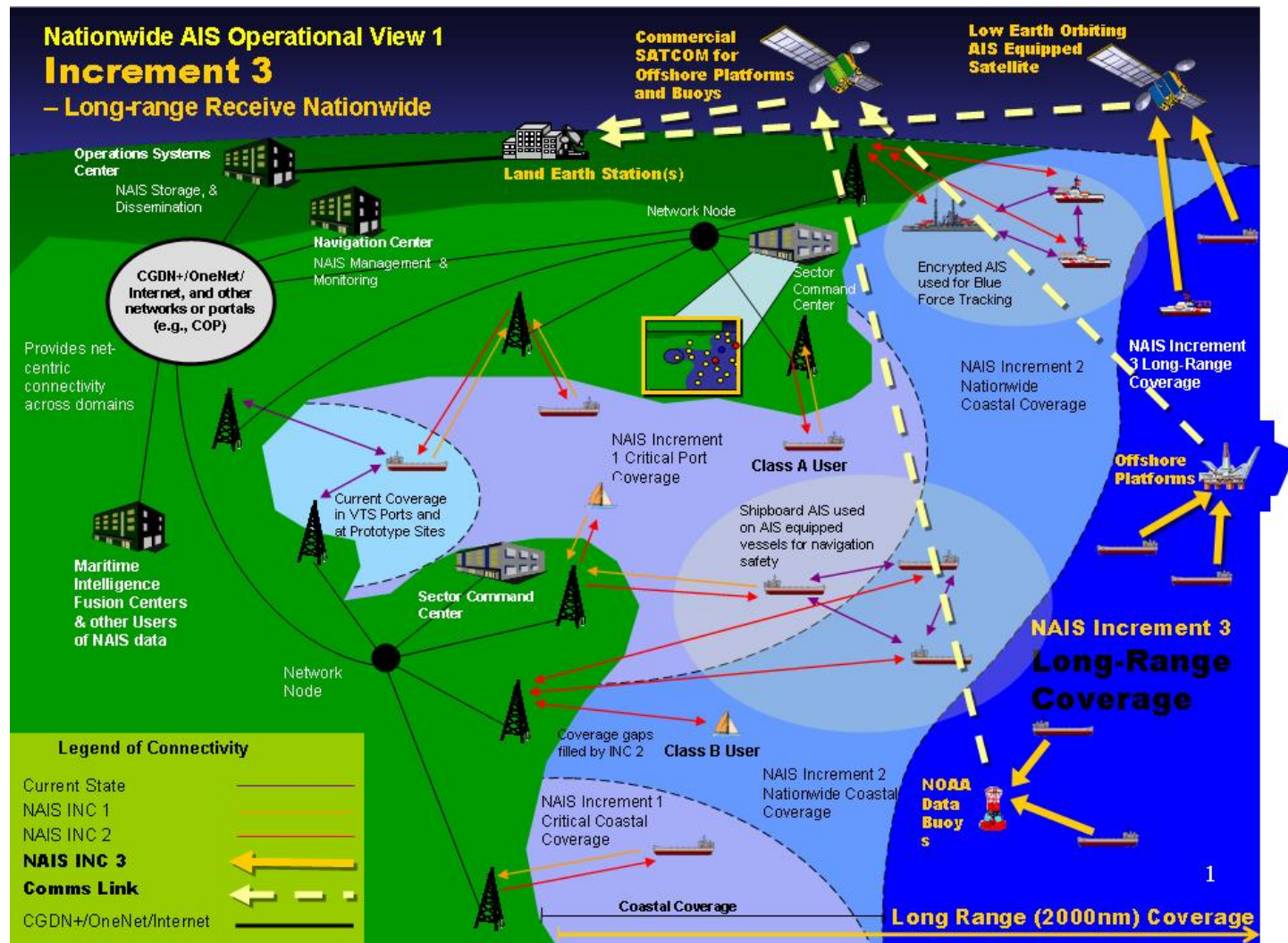


Increment 2 Status

Increment 2 Procurement

- Increment 2 divided into two phases
 - Phase 1 – “Core” functionality: AIS Transceiver Base Stations in 3 Sectors, Enterprise Data Center, System Operations Center, and Data Network
 - Phase 2 – Build-out of remaining 32 Sectors
- Phase 1 Request for Proposal Released December 2007
- Proposals Received March 2008
 - Source selection in process
 - Anticipate award by 30 September 2008

Increment 3 Conceptual View



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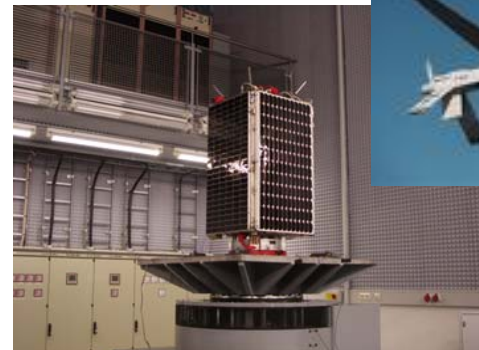
Increment 3 Requirements / Solutions

- Requirements

- Provide offshore receive coverage 50 nm out to 2000 nm
- Update vessel tracks 50 – 300 nm every 2 hrs
- Update vessel tracks 300 – 2000 nm every 4 hrs

- Possible Solutions

- Offshore buoys – NOAA weather buoys
- Offshore platforms – oil rig platforms
- Satellites
- Blimps / Aerostats
- Unmanned Aerial Vehicles (UAVs)



Increment 3 Offshore Prototype Status

Increment 3 Prototypes

- NOAA Weather Buoys

- Low-power package, store-and-forward via Iridium satellites
- Four buoys deployed to date
- Equipment issues (broken antennas)
- Funding provided to repair and operate initial four through FY 09

- Offshore Oil Platforms

- Four sites initially equipped with AIS base stations / receivers
- One site destroyed by Hurricane Katrina
- Three sites continue to feed NAIS via Vessel Traffic Systems (VTSs)



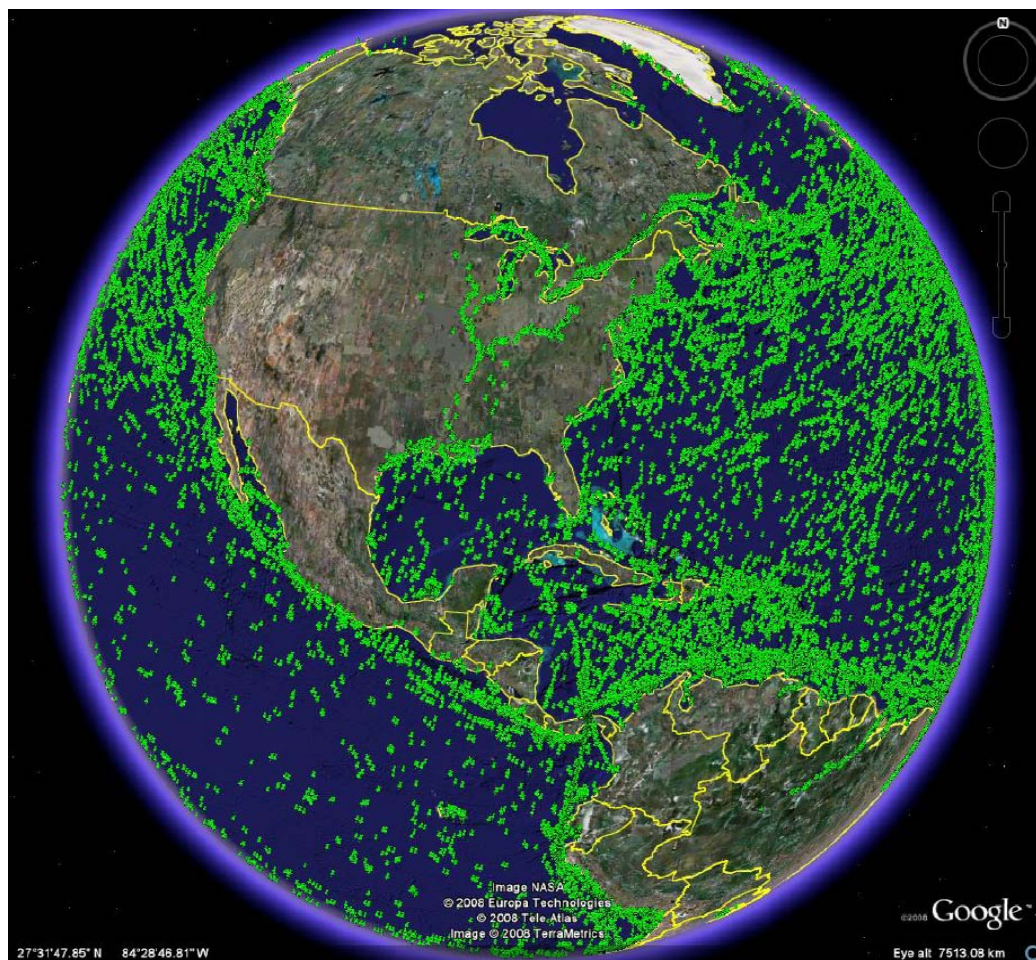
Increment 3 Satellite Prototype Status

Orbcomm Satellites

- Launched 6 Satellites 19 June 2008
 - Five AIS-equipped Orbcomm Quick Launch (QL) satellites
 - One AIS-equipped Concept Demonstration Satellite (CDS)
- CG receives 1 yr of CDS data (renewable), 90 days of QL data
- Limited testing began 29 June 2008
 - Approximately 270,000 messages being received daily
 - Tracking 16,000 individual vessels
 - Initial vessel track coverage very promising
 - Data flow to CG initiated August 2008
 - Status of data analysis results to date will be provided in tomorrow's session



Initial ORBCOMM Tracks – North America



AIS Satellite Challenges

Technical

- Receiver saturation (VDL loading)
- Timeslot collisions / message de-confliction
- Adjacent channel interference
- Downlink bandwidth requirements
- Overpopulation of transponders when Class B's are fielded

Political

- Tracking of vessels outside US
- Spectrum management of adjacent and AIS channels



Summary

NAIS Status

- Increment 1 - Operational
- Increment 2 – Phase 1 ready for contract award
- Increment 3 – Concept Demonstration Payload and Prototypes deployed, data validation and assessment is ongoing



NAIS Points of Contact

NAIS Staff

- Project Manager (PM) – CAPT Jerry Doherty – Jerry.D.Doherty@uscg.mil
- Deputy PM – CDR Keith Ingalsbe – James.K.Ingalsbe@uscg.mil
- Technical Director – Gene Lockhart – Eugene.G.Lockhart@uscg.mil

NAIS Link

- Project Site: <http://www.uscg.mil/nais/>

Questions?

